

# RENEWABLE NATURAL GAS

## Pipeline Access, Takeaway and Scheduling

CPUC RNG Workshop  
May 23, 2019



# Access to Utility System

## Rule 39 Access to Utility System

- Base [interconnection](#) and [operational balancing](#) agreements created for interstate pipelines and LNG interconnectors
- California Producer (CP) [interconnection](#) and [operational balancing](#) agreements are modified versions of the Base agreements to accommodate CPs' smaller and varying production
- Base agreements default for biomethane interconnectors
- Advice letter deviation process to use CP forms

# Takeaway

## Schedule G-BTS Backbone Transportation Service

### Schedule G-BTS

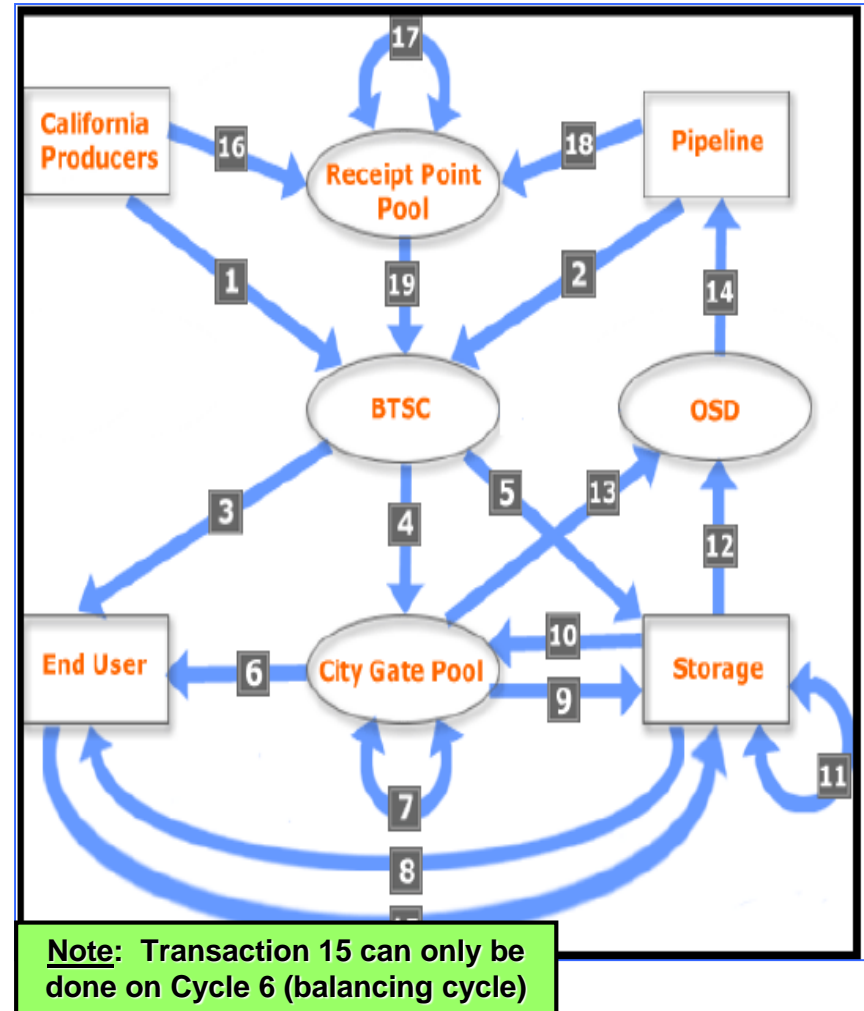
- » Separate and distinct from access
- » Transportation from the Rule 39 receipt points to the City Gate
- » **Typically managed by either marketer or end user via their own rights or assignment of interconnector rights**
- » Direct ownership may violate IRS Income Tax Component Contributions & Advances (ITCCA) safe harbors and increase interconnection costs by 22-35%, currently, 24%

### Open Season

- Triennial 3-step open season: Pre-open season, Preferential & Long Term
  - Spring-Summer 2020 for 10/1/20-23 term
- Pre-open season set asides includes CA Producers
  - CP Forms, absent CP definition change, don't provide Bio-CH4 set aside
- Preferential for end use customers
- **Long term is 1<sup>st</sup> opportunity for CA biomethane producers**
- Contract Interchangeability
- All unsubscribed available 1<sup>st</sup> come-1<sup>st</sup> served basis thereafter
- Interruptible Service

# Schedule G-BTS Transactions Model

- » Typically bio-CH<sub>4</sub> moves via paths 1 or 2 & 3 using marketer or end user BTSC
- » There are a total of 19 transactions
- » A rectangle demonstrates a point where gas originates from or where it ends up at. Primary **supplies** are:
  - Pipelines (PPLN)
  - California Producers (CP)
- » An oval will require balancing. These are the **markets**:
  - Receipt Point Pools (RPPL)
  - Backbone Transportation Service Contracts (BTSC)
  - City Gate Pools (CGPL)
  - Off-System Delivery (OSD)



# Agreements

## Access

- » Consulting Services Agreement
  - Interconnect Capacity Study
  - Preliminary Engineering Study
  - Detailed Engineering Study
  - Confidentiality
- » Interconnection & Collectible Systems Upgrade
- » Operational Balancing

## Takeaway

- » Collectible Systems Upgrade
- » Electronic Bulletin Board
- » Receipt Point Master
- » Backbone Transportation Service Contract
  - Electronic transactions for receipt points, term, rates and quantity



# Interconnection and Collectible System Upgrade and Operational Balancing Agreements

- » California Producer Interconnection, [Interconnect Collectible System Upgrade and Operational Balancing Agreements \(CPIA, CPICSUA & CPOBA\)](#)
- » CPIA addresses operation, maintenance and capital cost recovery along with standard terms and conditions: precedent conditions, gas deliveries, assignments, notices, limited warranty, indemnity, dispute resolution, miscellaneous, Interconnector and Utility facilities
- » CPICSUA (exhibit to CPIA) addresses engineering, procurement and construction of facilities to provide the Interconnect Capacity and associated terms and conditions
- » CPOBA addresses scheduling and operational imbalances and remedies and associated terms and conditions
- » Collectible System Upgrade Agreement (CSUA) include the activities from initial study through construction under terms mutually agreeable to the Utility and the party in Appendix “B” to the CSUA to add requested takeaway capacity

# RENEWABLE NATURAL GAS

## On-going Gas Scheduling/Balancing

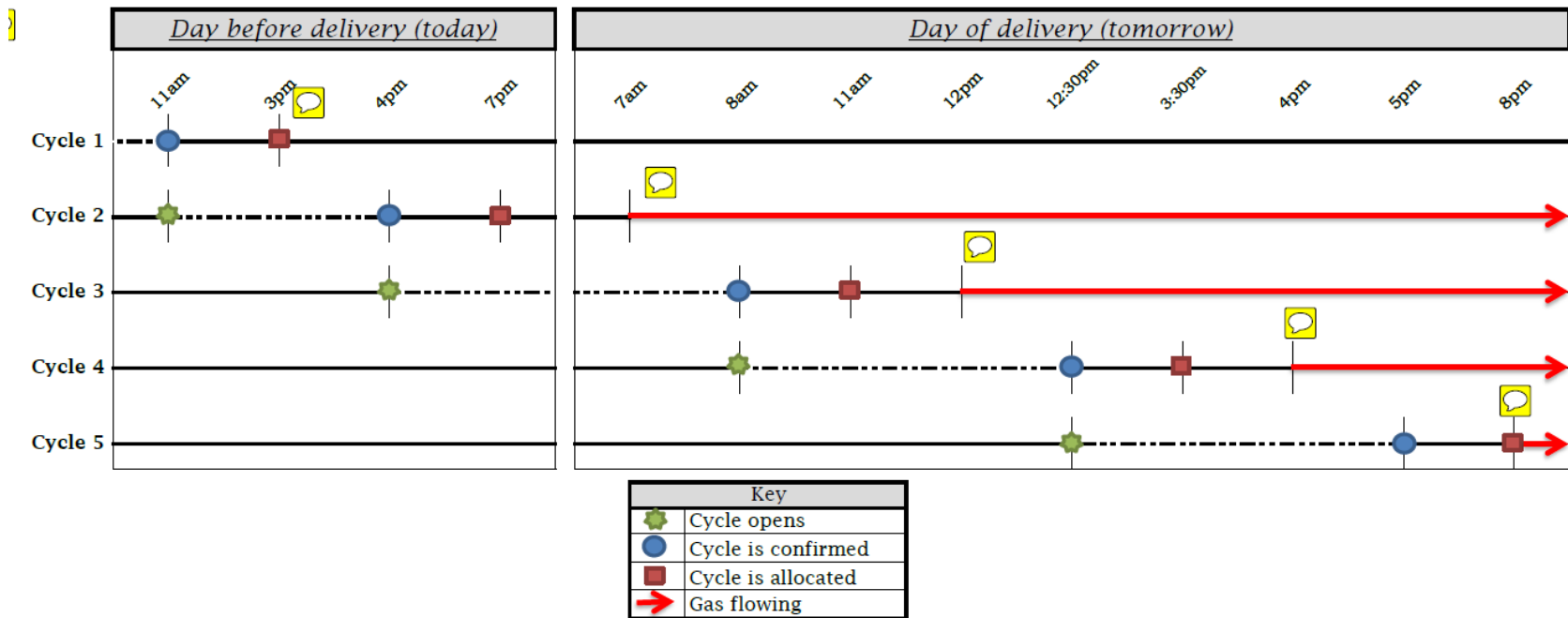
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# Rule 30 Transportation of Customer Owned Gas

- » “...the customer will deliver or cause to be delivered to the Utility and accept on redelivery quantities of gas which shall not exceed the Utility's capability to receive or redeliver such quantities....”
  - All receipts must either be redelivered to end users or into storage
    - Under and over deliveries outside provided tolerances use others' tolerances
    - Under deliveries risk end users not having gas
    - Over deliveries risk triggering the point of receipt over pressure protection controls to prevent the system being over pressured

# Scheduling: Nominations, Confirmation, Allocation, Flow



\*Deadlines may vary due to cycle extensions or upstream pipeline delays

# Operational Imbalances

- » Difference between scheduled and physical deliveries
- » **Typically managed by agent marketer with Interconnector responsible for charges**
  - Key is timely communication of deviations from plan so that scheduled quantities can be adjusted to match physical
- » **Envoy CPOBA balancing tracking**
- » Multiple Opportunities to adjust Schedule to match Physical
  - Two nomination cycles day before delivery
  - Three cycles day of delivery
  - Elapsed pro rata rules
    - can't reduce to < previously allocated / scheduled quantities for prior cycle assuming they "flowed" entire Gas Day at uniform hourly rate
- » Adjust subsequent day(s) deliveries and schedules
- » Imbalance tolerance

# Operational Imbalances

- » Trade with other CPOBA entities
- » Cash out if not cured
- » Daily Operational Flow Orders apply
  - If a Balancing Agent's OFO daily gas imbalance exceeds the applicable daily imbalance tolerance by 10,000 therms or less, the OFO, noncompliance charge will be zero
  - amount exceeds the daily imbalance tolerance by more than 10,000 therms, the Balancing Agent will be responsible for the full noncompliance charge; i.e. 10,000 therms will not be deducted from the daily gas imbalance that exceeds the daily imbalance tolerance.
  - Temporary trading the day after

# California Producer Delivery Report

## Producer Delivery



Producer Delivery - 04/01/2019 to 04/30/2019

Producer: ABC Company  
Contract: P0000

GNIN:  
Contract Start Date: 99/99/9999

Contract End Date:

Payback Period: 14 days

Flow Date	Interconnect Capacity (Dth/d)	Tolerance Band (+/- Dth)	OFO Day	Missing Delivery Data	Daily Scheduled (Dth)	Daily Delivery (Dth)	Daily Operational Imbalance (Delivery - Scheduled) (Dth)	Cumulative Operational Imbalance Before Adjustment (Dth)	OFO Day Cash-out (Dth)	Trade Adjustment (Dth)	True-up (Dth)			Measurement Correction (Dth)			Imbalance Adjustment (Dth)			Payback Cash-out (Dth)	Cumulative Operational Imbalance After Adjustment (COI) (Dth)	Payback Day
											Quantity	Cash-out	Net Adjustment	Quantity	Cash-out	Net Adjustment	Quantity	Cash-out	Net Adjustment			
04/01/2019	3,450	2,415.0	LOW (Stage 1, -5%)		0	309.2	309.2	4,122.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,122.9	5
04/02/2019	3,450	2,415.0	LOW (Stage 1, -5%)		0	276.8	276.8	4,399.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,122.9	6
04/03/2019	3,450	2,415.0	LOW (Stage 1, -5%)		0	286.7	286.7	4,409.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,409.6	7
04/04/2019	3,450	2,415.0	LOW (Stage 1, -5%)		100	300.6	200.6	4,610.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,610.2	8
04/05/2019	3,450	2,415.0	LOW (Stage 1, -5%)		401	295.3	(105.7)	4,504.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,504.5	9
04/06/2019	3,450	2,415.0	HIGH (Stage 3, 5%)		901	299.0	(602.0)	3,902.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,902.5	10
04/07/2019	3,450	2,415.0			901	297.6	(603.4)	3,299.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,299.1	11
04/08/2019	3,450	2,415.0	LOW (Stage 1, -5%)		901	281.0	(620.2)	2,679.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,679.1	12
04/09/2019	3,450	2,415.0			901	274.5	(626.5)	2,052.6	0.0	0.0	(9.6)	0.0	(9.6)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,043.0	13
04/10/2019	3,450	2,415.0			901	289.5	(611.5)	1,431.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,431.5	
04/11/2019	3,450	2,415.0	LOW (Stage 1, -5%)		901	280.8	(620.2)	811.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	811.3	
04/12/2019	3,450	2,415.0			901	268.0	(633.0)	178.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	178.3	
04/13/2019	3,450	2,415.0	LOW (Stage 1, -5%)		286	271.7	(14.3)	164.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	164.0	
04/14/2019	3,450	2,415.0	LOW (Stage 1, -5%)		286	277.3	(8.7)	155.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	155.3	
04/15/2019	3,450	2,415.0	LOW (Stage 1, -5%)		780	257.5	(522.5)	(367.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(367.2)	
04/16/2019	3,450	2,415.0			901	278.1	(622.9)	(990.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(990.1)	
04/17/2019	3,450	2,415.0	LOW (Stage 1, -5%)		350	280.5	(66.5)	(1,059.6)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,059.6)	
04/18/2019	3,450	2,415.0	LOW (Stage 1, -5%)		350	281.6	(66.4)	(1,128.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,128.0)	
04/19/2019	3,450	2,415.0	LOW (Stage 1, -5%)		350	285.2	(64.8)	(1,192.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,192.8)	
04/20/2019	3,450	2,415.0	HIGH (Stage 3, 5%)		350	299.1	(60.9)	(1,253.7)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,253.7)	
04/21/2019	3,450	2,415.0	HIGH (Stage 3, 5%)		350	276.6	(73.4)	(1,327.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,327.1)	
04/22/2019	3,450	2,415.0	LOW (Stage 1, -5%)		350	280.8	(66.2)	(1,396.3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,396.3)	
04/23/2019	3,450	2,415.0			292	263.2	(28.8)	(1,425.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,425.1)	
04/24/2019	3,450	2,415.0			350	240.9	(109.1)	(1,534.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,534.2)	
04/25/2019	3,450	2,415.0			246	251.9	5.9	(1,528.3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,528.3)	
04/26/2019	3,450	2,415.0	HIGH (Stage 3, 5%)		209	243.6	34.6	(1,493.7)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,493.7)	
04/27/2019	3,450	2,415.0			250	253.0	3.0	(1,490.7)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,490.7)	
04/28/2019	3,450	2,415.0			250	245.2	(4.8)	(1,495.5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,495.5)	
04/29/2019	3,450	2,415.0	LOW (Stage 1, -5%)		250	257.6	7.6	(1,487.9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,487.9)	
04/30/2019	3,450	2,415.0			250	269.1	19.1	(1,468.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1,468.8)	
Contract Sub Total					13,258	8,261.9	(4,996.1)		0.0	0.0	(9.6)	0.0	(9.6)	0.0	0.0	0.0	(276.8)	0.0	(276.8)	0.0		



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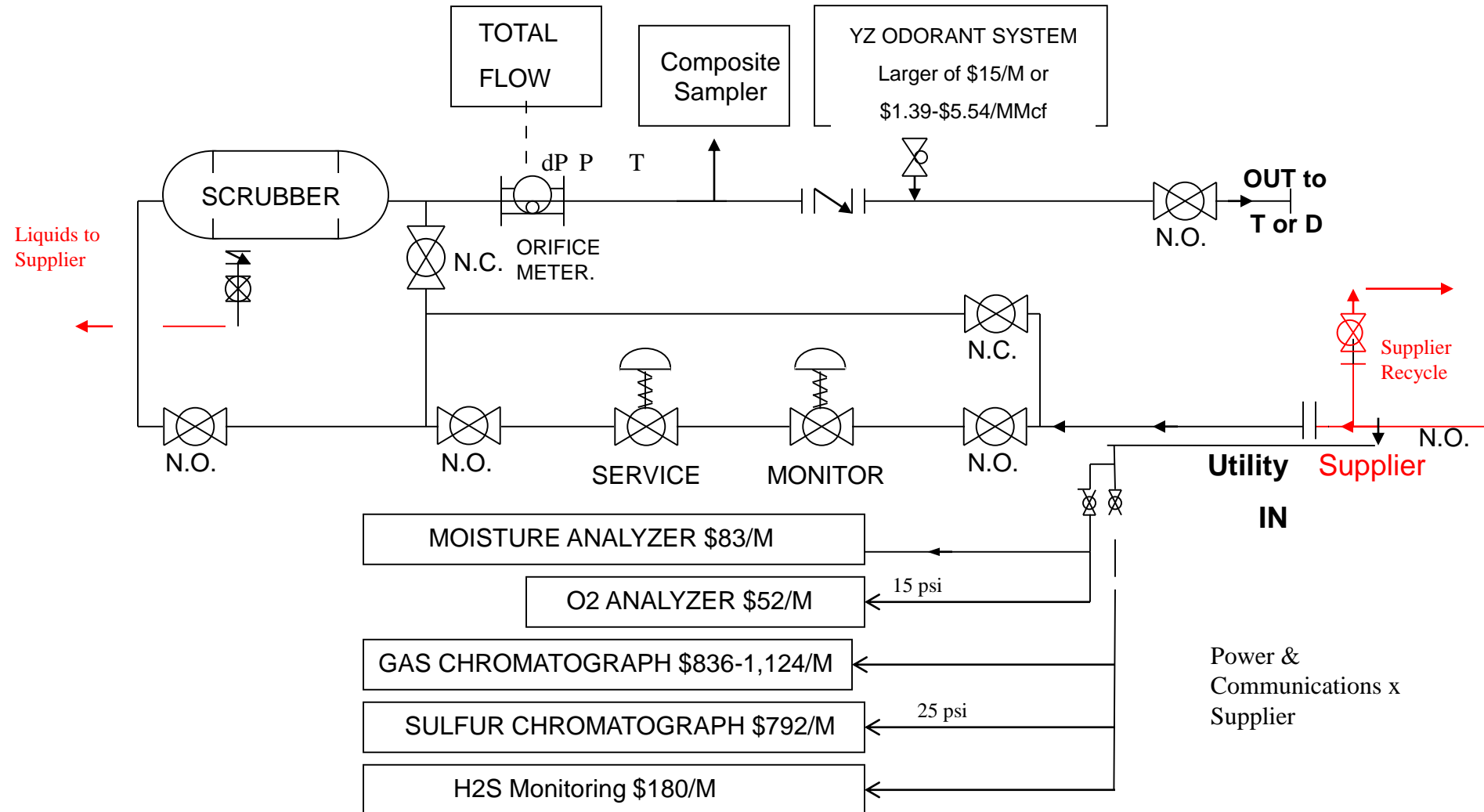
## On-going Point of Receipt Maintenance

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# Typical Utility Biomethane MSA

Base O&M Fee \$1,729/month

Plus GQ Monitors, CUPA & AQMD Fees \$3,500-\$5,000/month



# Ongoing O&M and Capital

## » O&M

- Meter Set Assembly Routine Maintenance
- Odorant
- Interconnection-Specific
- Analyzers:
  - H2S, Moisture & CO2, gas chromatograph (GC), sulfur GC, O2
- O&M Fee \$3,500-\$5,000/Month
- Plus
  - Replacement Parts
  - Visits Outside Normal Business Hours
  - Non-Standard Work
  - Developing vinyl chloride & siloxane analyzers

## » Capital

- Replacement of failed, worn out or obsolete components, consistency with SoCalGas practices, or new technology
  - Gas chromatographs
  - Circuit boards
  - Odorization
  - Etc.
- Additional monitoring and control components
  - VC analyzer
  - Siloxanes analyzer
  - Etc.
- Btu districts equipment and programming
- Scheduling program updates